NILES®

INSTALLATION GUIDE

SIGNAL ACTIVATED A/B SWITCH
AUTOMATED SWITCHING SYSTEM

SAS-1

CONGRATULATIONS!

Thank you for choosing the **SAS-1 Signal Activated A/B Switch** from Niles. With proper installation and operation, you should enjoy years of trouble-free use.

Niles manufactures the industry's most complete line of custom installation components and accessories for audio/video systems. To see the complete Niles product assortment, visit us on the Internet at: **www.nilesaudio.com.**

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INTRODUCTION

The SAS-1 is an automatic A-B switching system designed to replace manually operated A-B switches. It automatically switches from A to B when a signal is present at its B input. The unit's three switching sections can switch three different kinds of signals: Line-level audio, composite video and speaker level audio. The SAS-1 switches each of these sections at the same time, allowing simultaneous control of these signals if needed. Five-way speaker wire binding posts are provided for the speaker level switching and RCA-type phono jacks are provided for the line-level audio/video switching.

FEATURES

- Replaces manually operated A-B switches
- Audio power handling: 600W per channel
- SAS-1 is capable of switching speaker-level, line-level audio, and composite video signals
- May be configured to use any of three trigger signals: audio, video, or voltage
- Exclusive signal-detection circuitry ensures reliable operation
- Control input for voltage activation (5V-30V AC/DC at 20mA)
- 12Volt control output for activating other Niles devices such as a SPK-1, AVS-2, AC-3, APC-2 or RFS-1
- Normally Open (N.O.) relay contacts for controlling devices such as electric screens, lifts and drapes
- Relay contacts rated at one amp, 30V max., AC/DC
- Premium gold-plated RCA connectors and five-way, nickel-plated binding posts

OPERATION

There are two ways to trigger the SAS-1 switch: a signal sensing mode (1) and a voltage control mode (2).

1. *In the signal sensing mode, the SAS-1 automatically switches from A to B when a signal is present at input B. A sensitivity control is provided for setting the amount of input level (trigger threshold) needed to activate the switch. The B input will have priority as long as a signal remains at its input. Depending upon the setting of the delay control, the unit switches from B back to A anywhere between ¼ of a second to 30 seconds after the trigger signal (input B) is removed. The SAS-1 can be programmed to trigger from the speaker-level, line-level or video sources. At DIP switch is provided for the programming.*

2. *In the voltage control mode, applying 5 to 24 volts AC or DC to the control input connector will trigger the SAS-1 to switch. There are several ways this feature can be used:*

   a) *An included wall mount, 16Volt AC transformer (Part# XF00008) can be used as the control voltage source. Plugging the AC transformer into the switched AC outlet of an AM/FM receiver will trigger the SAS-1 to switch every time the receiver is turned on.*

   b) *A toggle switch wired between the output of the AC transformer and the "Control IN" jack can be used as a manual trigger.*

   c) *Any voltage source between 5 to 24 Volts AC or DC can be used to activate the SAS-1. For example, a 12Volt control signal from a home automation system can trigger the SAS-1.*

A control output connector is also provided. It has four screw terminals and provides two different outputs. Two of the terminals provide a set of normally open, dry relay contacts and the other two provide 12Volt DC output.

The set of dry contacts "close" whenever the switching section of the SAS-1 is activated. They will remain "closed" as long as the signal that triggered the SAS-1 is present. Depending on the setting of the delay control, they will "open" anywhere between ¼ of a second to 30 seconds after the signal that triggered the SAS-1 is removed. With this feature, the SAS-1 can activate television lift systems, operate electric projector screens, control lighting systems, etc.

The 12Volts DC is present at the other two terminals whenever the switching section of the SAS-1 is activated. Depending on the setting of the Delay Control, the voltage turns off anywhere between ¼ of a second to 30 seconds after the signal that triggered the SAS-1 is removed. This feature is provided as an interface when using the SAS-1 to control other Niles switching devices such as the AVS-2, SPK-1 and AC-3. refer to the section titled "System Expansion" for more details.

INSTALLATION

The SAS-1 should be installed near the equipment or sources you are going to control. An unswitched AC outlet is required for the wall mount AC transformer that powers the unit. The SAS-1 can be tucked away behind the equipment or attached to the mounting surface using supplied hardware.

CONNECTIONS

Refer to **Figure 1** on the following page for hookup diagram.

PROGRAMMING

Once the line-level or speaker-level sources have been connected, the SAS-1 must be programmed for the source(s)) you are going to use as a trigger for the switch.

AUDIO ACTIVATED MODE – SPEAKER AND/OR LINE-LEVEL

If you want the SAS-1 to activate when ever a speaker-level signal is present at the "B" input, locate the DIP switch on the front panel and move the slide switch underneath the letter "S" up. Use a small screwdriver or paper clip to move the switch.

If you want the SAS-1 to activate whenever a line-level audio signal is present "B," move the slide switch underneath the letter "A" up.

NOTE: IF YOU ARE USING SAS-1 TO SIMULTANEOUSLY SWITCH BOTH LINE-LEVEL AND SPEAKER-LEVEL SIGNALS AND WANT THE UNIT TO TRIGGER FROM EITHER SOURCE, MOVE BOTH THE "A" SWITCH AND THE "S" SWITCH UP.

VIDEO-ACTIVATED MODE

If you want the SAS-1 to activate whenever a video signal is present at "B," move the slide switch labeled "V" up.

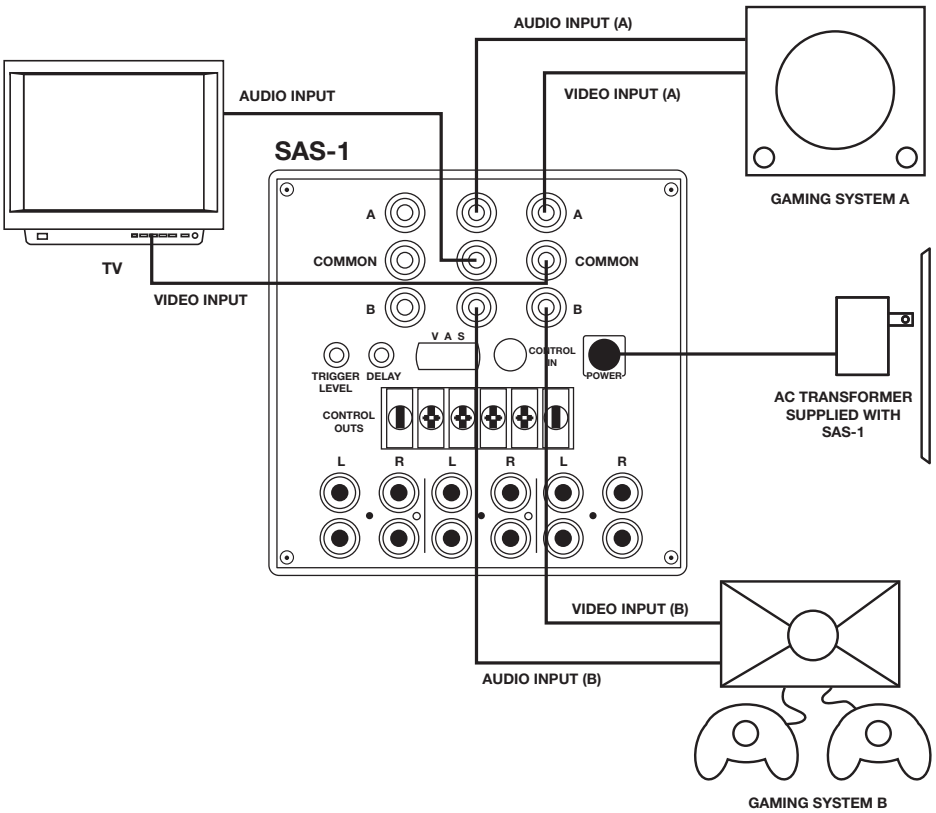
NOTE: IF YOU ARE USING THE SAS-1 TO SIMULTANEOUSLY SWITCH BOTH LINE-LEVEL AUDIO AND VIDEO SIGNALS, AND WANT THE UNIT TO TRIGGER FROM EITHER SOURCE, MOVE BOTH THE “A” SWITCH AND THE “V” SWITCH UP. IF YOU WANT THE SAS-1 TO TRIGGER FROM EITHER SPEAKER-LEVEL OR VIDEO SIGNALS, SLIDE BOTH THE “S” SWITCH AND THE “V” SWITCH UP. IF YOU MOVE ALL THREE SWITCHES UP, THEN THE SAS-1 WILL TRIGGER FROM ANY OF THE THREE SOURCES

VOLTAGE-ACTIVATED MODE

In this mode, the SAS-1 switches from A to B when 5 to 24 Volts (AC or DC) is applied to the “CONTROL IN” jack. This is not affected by the settings of the DIP switches

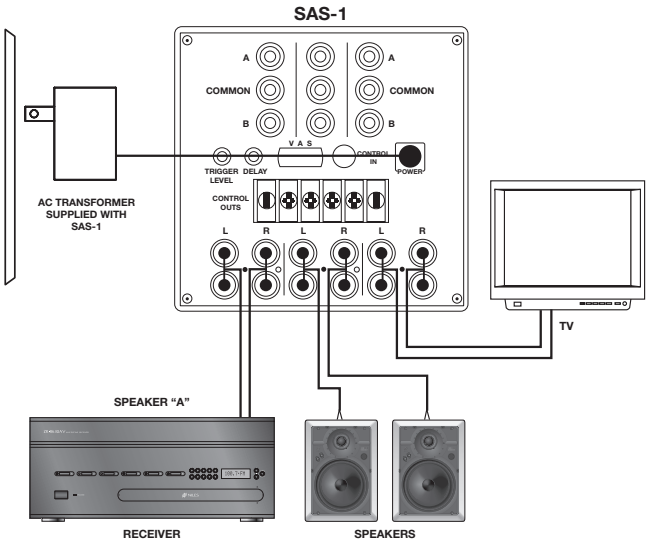
INSTALLATION EXAMPLES USING THE SAS-1

USING AN SAS-1 VIDEO SIGNAL ACTIVATED SWITCH.
FIGURE 1



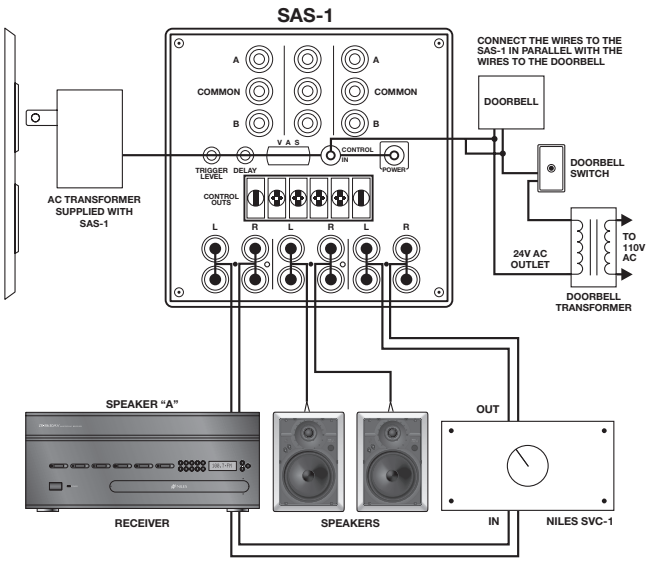
USING AN SAS-1 TO AUTOMATICALLY SWITCH A PAIR OF SPEAKERS BETWEEN A RECEIVER AND A TELEVISION.

FIGURE 2

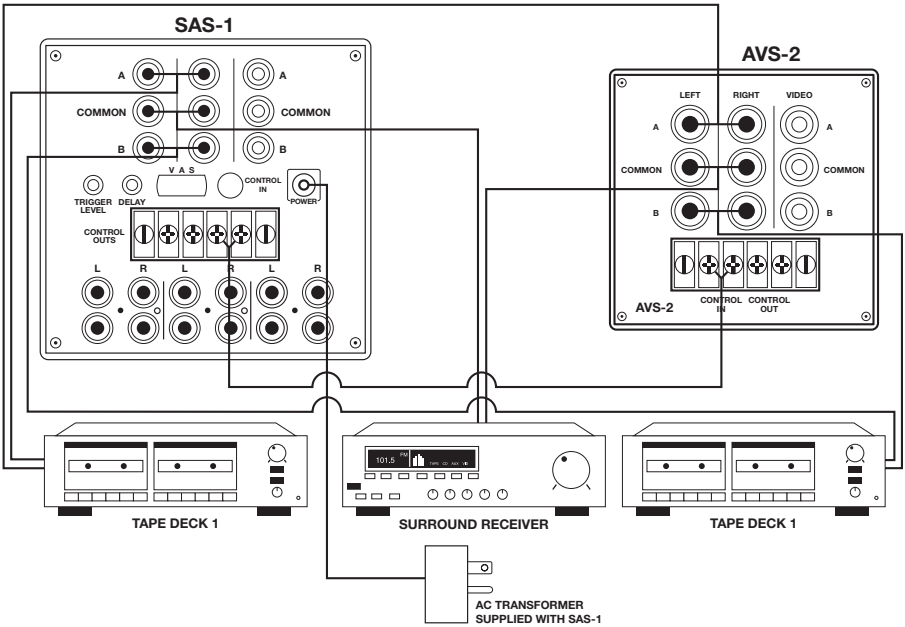


USING AN SAS-1 TO AUTOMATICALLY MUTE THE STEREO WHEN THE DOORBELL RINGS.

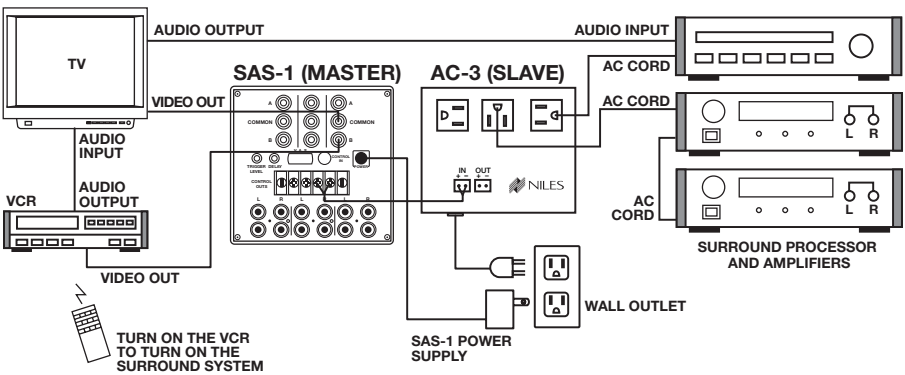
FIGURE 3



USING AN SAS-1 AND AN AVS-2 TO AUTOMATICALLY SWITCH BETWEEN TWO TAPE DECKS CONNECTED TO A RECEIVER WITH ONLY ONE TAPE MONITOR.
FIGURE 4



USING AN SAS-1 AND AN AC-3 TO TURN ON A SURROUND SOUND SYSTEM AUTOMATICALLY.
FIGURE 5



ADJUSTING THE SAS-1

The Sensitivity Control adjusts the amount of input level needed to trigger the switch. The threshold may be set anywhere between 15mv and 300mv for line-level audio signals and .1 watt to 4 watts for speaker-level signals. Adjusting the control clockwise will increase the sensitivity, lowering the trigger threshold. Adjusting the control counter-clockwise will decrease the sensitivity, increasing the trigger threshold.

Once the sources to be switched have been connected to the SAS-1, activate the source connected to "B" input and adjust the sensitivity control until the SAS-1 is triggered at the desired level. You will hear the relays in the SAS-1 "click" when it is triggered.

NOTE: THE FACTORY SETTING OF THE SENSITIVITY CONTROL IS MAXIMUM (FULLY CLOCKWISE). IF YOU WANT THE SAS-1 TO TRIGGER AT THE SLIGHTEST INPUT LEVEL, LEAVE THE CONTROL AT THIS SETTING.

The Delay Control adjusts the amount of time the SAS-1 will switch from B back to A once the trigger signal is removed. The delay time may be set anywhere between ¼ of a second to 30 seconds. Adjusting the control clockwise will increase the delay time.

Once the sources have been connected, and the sensitivity control has been adjusted, activate the source connected to the "B" input. You will hear the relays in the SAS-1 click when triggered. Adjust the Delay Control and then turn off the "B" source, noting the time the relays in the SAS-1 "click" again. The time between the clicks is the delay time. Repeat the process until the delay is set to the desired time.

NOTE: THE FACTORY SETTING OF THE DELAY CONTROL IS APPROXIMATELY 15 SECONDS. THE SETTING TAKES INTO ACCOUNT THAT CERTAIN EVENTS CAN OCCUR DURING THE PLAYBACK OF A SOURCE, SUCH AS THE TIME A CD PLAYER TAKES TO CHANGE DISCS, A LASERDISC PLAYER TAKES TO SWITCH SIDES OR A CASSETTE DECK TAKES TO REVERSE PLAY. SETTING THE DELAY CONTROL FOR TOO SHORT A TIME MAY CAUSE THE SAS-1 TO "DROP OUT" PREMATURELY, INTERRUPTING PLAYBACK OF THE "B" SOURCE.

USING THE CONTROL IN

Applying 5 to 24 volts (AC or DC) to the CONTROL-IN jack will immediately trigger the SAS-1 to switch from A to B. Depending on the setting of the Delay Control, the SAS-1 will return to INPUT A between ¼ of a second to 30 seconds after the control voltage is removed. The CONTROL IN jack is not affected by the position of the DIP switches.

A wall mount, 16Volt AC transformer can be used as the control voltage source. A transformer of this type is included.

USING THE CONTROL OUT

The CONTROL OUT connector has 4 screw terminals and provides two different outputs. The two terminals on the left provide a set of normally open, dry relay contacts, and the two terminals on the right provide a 12Volt DC output.

The set of dry contacts close whenever the SAS-1 is triggered. They will remain closed as long as the signal that triggered the SAS-1 is present. Depending on the setting of the delay control, they will open anywhere between ¼ of a second to 30 seconds after the signal that triggered the SAS-1 is removed. With this feature, the SAS-1 can activate television lift systems, operate electric projector screens, control lighting systems, etc.

The 12Volt DC is present at the other two terminals whenever the switching section of the SAS-1 is activated. Depending on the setting of the delay control, the voltage turns off anywhere between ¼ of a second to 30 seconds after the signal that triggered the SAS-1 is removed. This feature is provided as a convenient interface for using the SAS-1 to control other Niles switching devices, such as the AVS-2, SPK-1 and RFS-1. Refer to the section titled "System Expansion" for more details.

NOTES: THE DRY RELAY CONTACTS CAN SWITCH A MAXIMUM OF 28VOLTS DC AT 1 AMP. THE 12VOLT DC OUTPUT CAN SUPPLY UP TO 400 MILLIAMPERES (.4 AMP).

SYSTEM EXPANSION

There are other Niles switching devices available which are used to expand the switching capabilities of the SAS-1. Depending on the application, one or more of these expansion units may be needed. For example, by connecting the AC-2 Voltage Activated AC outlet to the SAS-1 you now have a signal-activated, switched AC outlet. Or, by connecting both an SPK-1 and an AC-3 to the SAS-1 you can switch 4 channels of speakers for surround sound and turn on any needed power amplifiers at the same time. The SAS-1 can have several of these expansion units connected to it, however, there is a practical limit of the number of units which may be connected.

A maximum of four expansion units may be connected to the DC control output of the SAS-1.

EXPANSION CAPABILITIES

The following expansion units are currently available for use with the SAS-1:

AC-3 – Voltage Activated AC Outlet Strip

AVS-2 – Voltage Activated Audio/Video A-B Switch

SPK-1 – Voltage Activated Speaker A-B Switch

RFS – Voltage Activated RF A-B Switch

SPECIFICATIONS

Speaker Level Power Handling:	600 Watts channel continuous (RMS)
Control Voltage Output:	12Volts DC at 400 milliamperes (.4 Amp)
Dry Relay Contact Rating:	Maximum of 28Volts DC at 1 Amp
Minimum Trigger Levels:	15 MV line-level, .1 Watt speaker-level
Delay Control Range:	Adjustable from ¼ of a second to 30 seconds
Frequency Response:	FLAT from 20 Hz to > 20 Khz
Signal to Noise Ratio:	> 90dB, 1Volt reference
Crosstalk:	-70dB at 20 Khz
Total Harmonic Distortion:	Less than .01%, 20 Hz to 20 Khz at 1Volt reference
Connectors: posts	RCA type phono jacks and five-way speaker wire binding
Power Requirements:	Wall-mount AC transformer supplied with unit
Overall Dimensions:	6-13/16" wide x 3-1/8" high x 5-5/16" deep
Weight:	1-3/4 lbs.

NOTES

NOTES

LIMITED WARRANTY

Niles Audio Corporation ("NILES") warrants its active products (those requiring AC or battery power) to the original purchaser to be free of manufacturing defects in material and workmanship for a period of two years from date of purchase.

This Warranty is subject to the following additional conditions and limitations. The Warranty is void and inapplicable if NILES deems that the product has been used or handled other than in accordance with the instructions provided by the manufacturer, including but not limited to damage caused by accident, mishandling, improper installation, abuse, negligence, or normal wear and tear, or any defect caused by repair to the product by anyone other than NILES or an authorized NILES dealer.

To obtain warranty service, take the unit to the nearest authorized NILES dealer, who will test the product and if necessary, forward it to NILES for service. If there are no authorized NILES dealers in your area, you must write to NILES and include your name, model and serial number of your unit, along with a brief description of the problem. A factory Return Authorization Number will be sent to you. DO NOT RETURN ANY UNIT WITHOUT FIRST RECEIVING WRITTEN AUTHORIZATION AND SHIPPING INSTRUCTIONS FROM NILES.

If the above conditions are met, the purchaser's sole remedy shall be to return the product to NILES, in which case NILES will repair or replace, at its sole option, the defective product without charge for parts or labor. NILES will return a unit repaired or replaced under warranty by shipping same by its usual shipping method from the factory (only) at its expense within the United States of America. THERE ARE NO OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION, EITHER EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER/ PURCHASER. NILES SHALL NOT BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES EXCEPT TO THE EXTENT PROVIDED (OR PROHIBITED) BY APPLICABLE LAW.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For the name of your nearest authorized NILES dealer contact:

NILES AUDIO CORPORATION, P.O. BOX 160818, Miami, Florida 33116-0818.

Please fill in your product information and retain for your records.

Model_____ Serial No._____ Purchase Date_____

DETACH HERE AND RETURN TO: NILES AUDIO CORPORATION WARRANTY REGISTRATION DEPT. P.O. BOX 160818 MIAMI, FLORIDA 33116-0818

WARRANTY REGISTRATION CARD

Model Purchased _____

Serial Number _____

Date Purchased (month/day/year) _____

Dealer Name and Location _____

_____

❍ Dr. ❍ Miss ❍ Mr. ❍ Mrs. ❍ Ms.

Name _____

Address _____

_____

City _____ State _____ Zip ____

Telephone ( ) _____

Please take a moment to fill out our warranty registration card. The information helps us to get to know you better and develop the products you want

Age:
❍ *Under 25*
❍ *25-34*
❍ *35-44*
❍ *45-54*
❍ *55 & over*

Income:
❍ *Under $24,999*
❍ *$25,000-$34,999*
❍ *$35,000-$44,999*
❍ *$45,000-$59,999*
❍ *$60,000-$74,999*
❍ *$75,000-$99,999*
❍ *Over $99,999*

Occupation:
❍ *Arts/Entertainment*
❍ *Business Owner*
❍ *Engineer*
❍ *Finance/Accounting*
❍ *General Office*
❍ *Management*
❍ *Professional*
❍ *Sales/Marketing*
❍ *Student*
❍ *Trades person*

Musical tastes: (Please check all that apply)
❍ *Alternative*
❍ *Classical*
❍ *Country*
❍ *Jazz*
❍ *New Age*
❍ *Popular*
❍ *R&B*
❍ *Rock*
❍ *Other* _____

How did you hear about Niles?
❍ *Architect/Developer*
❍ *Custom Installer*
❍ *Direct Mail*
❍ *Friend/Family*
❍ *In-Store Display*
❍ *Interior Designer*
❍ *Magazine Ad*
❍ *Mail-Order Catalog*
❍ *Newspaper Ad*
❍ *Product Brochure*
❍ *Product Review*
❍ *Retail Salesperson*

What magazines do you read?
1. _____
2. _____
3. _____

Who will install the product?
❍ *Custom Installer*
❍ *Electrician*
❍ *Friend*
❍ *Myself*

Which factor(s) influenced the purchase of your Niles product? (Please check all that apply)
❍ *Ease of Use*
❍ *Price/Value*
❍ *Product Features*
❍ *Quality/Durability*
❍ *Reputation*
❍ *Style/Appearance*
❍ *Warranty*

Do you . . . ?
❍ *Own a House. If yes, how many square feet?*
_____

❍ *Own a Town House/ Condominium/Co-op*
❍ *Rent an Apartment*
❍ *Rent a House*

Are you interested in receiving literature on other Niles products?
❍ *Yes* ❍ *No*

Are there products/ capabilities that you would like to see introduced?
_____
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